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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,344

11/14/2003

Daniel J. Pusiol

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EXAMINER

GAKH, YELENA G

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/713,344	Applicant(s) PUSIOL, DANIEL J.	
	Examiner Yelena G. Gakh, Ph.D.	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/20/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 9-95 is/are pending in the application.
- 4a) Of the above claim(s) 17-94 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9-16 and 95 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. RCE, filed on 01/20/09, and amendment, filed on 12/29/08, are acknowledged. Claims 1-2 and 9-95 are pending. Claims 17-94 are withdrawn from consideration. Claims 1-2, 9-16 and 95 are considered on merits.

Claim Objections

2. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Waiting for a relaxation time between pulses (at least $5T_1$) is inherent to any NMR (NQR) pulse sequence.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-2, 9-16 and 95 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims are written in unclear and vague language. The examiner suggests the following partial amendment to claim 1:

Claim 1: A method for at least one of detection or analysis of a test compound or an object ~~or test compound~~ that may contain a compound which simultaneously exhibits nuclear quadrupolar resonance and nuclear magnetic resonance, said compound bearing nuclei with a spins A capable of exhibiting a quadrupolar resonance (NQR); and of nuclei with a spins B capable of exhibiting a nuclear magnetic resonance, said method comprising:

a) applying an excitation pulse sequence, comprising a first pulse to the test compound or object at a first magnetic field H_1 to the object or test compound, said magnetic field H_1 having a first pulse and an excitation pulse sequence and which oscillates in with the quadrupolar NQR resonance frequency of said group of nuclei with spins A;

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simultaneously applying ~~to the test compound on or~~ said object ~~or test compound~~ a second magnetic field H_0 and a third magnetic field H_2 , wherein said second ~~magnetic field being a~~ magnetic field H_0 which is turned on in coincidence with the first pulse of said oscillating magnetic field H_1 ; and said third magnetic field ~~being a magnetic field H_2~~ ~~oscillating~~ oscillates within the magnetic resonance NMR frequency of said ~~group of~~ nuclei with spins B in said magnetic field H_0 ;

b) ~~detecting signals with a sensor element and~~ turning said second magnetic field H_0 off when a signal of quadrupolar resonance from said ~~group of~~ nuclei with spins A is maximal and; detecting signals with a receiver,

c) digitizing and summing detected signals while said second magnetic field H_0 is off, in synchrony with the excitation pulses sequence for said oscillating magnetic field H_1 ;

d) turning said magnetic field H_0 on again once the digitizing step ends; and

e) repeating steps b) to d) until a signal-to-noise ratio is adequate to detect said compound is obtained.

The examiner still has a question to the Applicant regarding step c), since it is not clear, as to what might be "in synchrony with the excitation pulses sequence for said oscillating magnetic field H_1 ".

Moreover, while the examiner tried to clarify the language of claim 1, it still remains unclear, as to what might be the excitation pulse sequence comprising a first pulse, since the pulse sequence assumes applying a sequence of pulses. However, no second pulse is recited in the claim.

Claim 11 is not clear, since programming a computer according to the pulse sequence is conventional in NMR or NQR, and therefore the steps are not apparent; the only recitation that seems to be relevant to the limitation of the subject matter recited in claim 1 would be the two last steps (digitizing at a frequency and filtering).

Claim 12 is still unclear - how one pulse sequence can be applied to another pulse sequence? The language should be clarified. Also, it is not clear, what are the successive pulses? The pulse sequence for H_1 is already recited in claim 1. Does it intend to recite "wherein the excitation pulse sequence of the first magnetic field H_1 comprises a series of successive pulses"? If the is the case, the intervals between pulses should be indicated.

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Claim 13 is unclear. It appears that field H_0 is applied more often than it is turned off.

It is not clear, what are "high-frequency" pulses in claim 14? There was no such terminology before. Also, shouldn't it be "a half of the free evolution decay"?

It is not apparent, as to what is decay T_2 of the pulse sequence in claim 15? T_2 is usually a characteristic of the environment, rather than the pulse sequence. Claim 15 also recites a high frequency pulse, which is different from the terminology used in the preceding claims. Furthermore, the language of claim 15 is not really related to the language of claim 1.

All dependent claims should be based on the language of the parent claim with limitations recited for specific features of the recitation of claim 1, which is not the instant case.

It is not clear in claim 16, what does it mean that "said third magnetic field H_2 is pulsed in synchronism with pulses of H_0 "? If it is a pulse sequence that is applied, does it mean that field H_2 also is pulsed with the same pulse sequence, with the same pulse lengths and time intervals between pulses as that for field H_0 ?

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yelena G. Gakh/
Primary Examiner, Art Unit 1797

3/2/2009